

## Impact of Incorporating a Self-care Management Program with Telephone Follow-up on Geriatric Patients' Self-care Compliance and Coping Post Cataract Surgery

Dina Metwally Sorour<sup>(1)</sup>, Eman Ahmed Rashad Elsakka<sup>(2)</sup>, Nesma Ahmed Lotfy<sup>(3)</sup>,  
Shaimaa Samir Dawood<sup>(4\*)</sup>

- (1) Lecturer of Gerontological Nursing, Faculty of Nursing, Alexandria University, Egypt
  - (2) Lecturer of Community Health Nursing, Faculty of Nursing, Damanhour University, Egypt
  - (3) Department of Biostatistics, High Institute of Public Health, Alexandria University, Egypt
  - (4) Assistant Professor of Gerontological Nursing, Faculty of Nursing, Alexandria University, Egypt
- Correspondence\* [shaimaa.dawoud@alexu.edu.eg]

### Abstract

**Background:** Cataract surgery is a day surgery, requiring older adults to manage their recovery independently after being discharged. Coping with post-operative challenges is crucial for faster recovery, as a patient's coping strategy can influence their engagement with their treatment. This fast-paced outpatient nature of cataract surgery requires adequate preparation and education from healthcare providers for patients returning to their homes on the same day of surgery. By combining educational sessions with personalized telephonic support, this research seeks to empower geriatric patients with the knowledge and skills necessary for effective self-management and coping during recovery. **Aim:** This study aimed to explore the impact of incorporating a self-care management program with telephone follow-up on geriatric patients' self-care compliance and coping post-cataract surgery. **Settings:** The study was conducted at the ophthalmology surgical inpatient department and the ophthalmology outpatient clinic of Damanhur Ophthalmology Hospital, a facility affiliated with the Egyptian Ministry of Health and Population. **Subjects:** the study included sixty older adult patients, who were undergoing cataract surgery during the data collection period and were conveniently recruited and randomly and evenly divided into control and intervention groups. Those patients aged 60 years and above, demonstrating effective communication skills, scheduled for their first cataract surgery, and admitted to the hospital at least 24 hours before the surgical procedure were included. **Tools:** three tools were used to collect data; Patients' socio-demographic and clinical data sheet, Self-care compliance scale, and post-discharge coping difficulty scale (PDCDS). **Results:** The study group exhibited better self-practice compliance and coping abilities postoperatively compared to the control group. The study group consistently showed higher median scores in self-practice compliance and lower scores in post-discharge coping difficulty at the 2nd, 7th, and one-month postoperative assessments, indicating the effectiveness of the combined self-care management program and telephone support in improving patient outcomes. **Conclusion:** The study highlighted that implementation of the Self-care Management Program with Telephone Follow-up proved to be successful in enhancing geriatric patients' self-care practices compliance, as well as, decreasing their post-discharge coping difficulties. **Recommendations:** Develop and implement personalized self-care management programs for geriatric patients undergoing cataract surgery, tailored to their specific needs and challenges. Additionally, providing ongoing monitoring and support for those patients through telephone follow-up to offer guidance, reassurance, and assistance during the recovery period, helps to address any emerging issues or concerns promptly.

**Keywords:** Self-care Management Program, Telephone Follow-up, Coping Skills, Self-care Practices, Cataract Surgery.

### Introduction

Cataract is still the leading cause of blindness and visual loss in the world (Pizzarello et al., 2004; Rao et al., 2011). It can manifest at birth, or early in life due to

ocular trauma, with the majority occurring in later life. Cataract is the primary cause of disability in older individuals following only arthritis and heart disease (one in every five people aged 65 to 74 develops cataract)

(Stevens et al., 2013). In Egypt, there is a significant number of people who suffer from blindness and visual impairment. More specifically, around one million individuals are blind, while three million have some form of visual impairment (World Health Organization [WHO], 2015). Cataract is the primary cause of visual impairment among the visually impaired population in Egypt, accounting for approximately 60% of the cases. Furthermore, it has been identified as the leading cause of blindness, responsible for 54.8% of blindness cases (Hegazy et al., 2012; World Health Organization [WHO], 2019).

Cataract pose a major health concern for older individuals in Egypt. A recent study conducted in Egypt and published in 2021 examined a total of 155,032 Egyptians aged 40 and above from 27 different governorates, cataract were identified in 33,610 individuals, accounting for approximately 21.7% of the total number of subjects (Aziz et al., 2021). Initially, cataract may be asymptomatic due to localized clouding, but as they progress, various symptoms such as blurred vision, altered color perception, and glare sensitivity may emerge (Khairallah et al., 2015; Lee & Afshari, 2017). In older adults, Cataract has been associated with harmful impacts on health; it increases the risk of developing frailty, falls, fractures, depression, and cognitive impairment, as well as reducing the percentage of the functional reserve with time. Furthermore, low vision poses significant psychological and social stress for those patients and their families, and contributing to the healthcare burden (Lam et al., 2015).

Surgery is the definitive cure for cataract, and it can be utilized when a person's visual impairment interferes with their daily activities (Lansingh et al., 2015). Two surgical methods remove the cataract; phacoemulsification and extracapsular cataract extraction (ECCE). Phacoemulsification combined with intraocular lens implantation has been the main surgical treatment for cataract (Roberts et al., 2020). Cataract surgery is a safe procedure that improves the quality of life and visual functioning in 90 % of cases (Taipale et al., 2020).

Although cataract surgery has advanced significantly, the risk of severe visual impairment due to postoperative complications remains (Li et al., 2011; Pandit & Coburn, 2011). Complications such as endophthalmitis, macular edema, corneal edema, hemorrhage, capsule rupture, and retinal detachment can arise as a result of inadequate postoperative care (Yan et al., 2019).

Surgery in general can be a major source of stress and presents challenges for many older adults and their family caregivers. Factors related to aging, such as decreased physical function and frailty, and comorbidity appear to be significant predictors of negative surgical outcomes (Lin et al., 2016; Hu et al., 2022). Elderly patients undergoing surgery often experience poorer outcomes, including higher mortality rates, postoperative complications, and longer hospital stays than younger (Baquero & Rich, 2015). Their increased comorbidities and perioperative risks create challenges not only for the older adults themselves but also for their families and healthcare providers, requiring greater care and support (Hoffmann, 2012).

For instance, cataract surgery is often performed as a day surgery with local anesthesia, allowing geriatric patients to return home on the same day (Chen & Zeng, 2013). This means that they are discharged during an intermediate stage of recovery and must manage their new medical situation, as well as their personal and family life independently (Meleis, 2010; Neville et al., 2014; González et al., 2017). Coping with these challenges plays a crucial role in the recovery process following cataract surgery and the coping strategy employed by a patient in response to these concerns and distress can greatly impact their active participation in and receptiveness to treatment. Therefore, it is essential to adequately prepare the elderly person for their homecoming after cataract surgery and gerontological nurses need to have an extensive understanding of the factors that contribute to poor outcomes for their patients to properly identify and address them (Miller et al., 2008; Costa et al., 2021).

Non-compliance with prescribed medication regimens is a significant factor that

can lead to adverse clinical outcomes, and it plays a crucial role in retarding postoperative recovery. Compliance is a complex healthcare concept with numerous components. These may include disease and health beliefs, degree of self-efficacy, communication styles, cognitive traits, social support, trust in healthcare providers, literacy, race, income, and age. (Dreer et al., 2012). Patients after cataract surgery often struggle with certain postoperative self-care practices and complex medication regimens, which involve antibiotic, steroid, and NSAID eye drops, each with their own dosing schedules and administration requirements (Dietlein et al., 2008). This complexity is even more challenging for elderly patients who may face difficulties in administering eye drops due to reduced manual dexterity, lack of tactile sensibility, tremors, difficulty tilting the head back, and visual impairment (Dietlein et al., 2008; Connor & Severn, 2011; Matossian, 2020).

Elderly patients, in addition to facing physical constraints, may experience cognitive or memory impairments that hinder their ability to comply with a post-operative regimen. Many older patients live alone and are compelled to self-administer their eye drops. It is highly unlikely that they are adhering accurately to medical recommendations, even if they believe they are doing so. Those patients may already be managing multiple doses of systemic medications and may find themselves overwhelmed and unable to integrate their postoperative eye drops into an existing medication schedule (Matossian, 2020). Patient education is associated with motivation and support which are the main keys to improving compliance (Jimmy & Jose, 2011).

Nurses play a critical role in prioritizing the health needs of elderly patients during the transition period and delivering personalized well-planned discharge services that promote patient self-care compliance (Eliopoulos, 2014). The American College of Eye Surgeons in 2019 stated that educational nursing interventions are effective strategies for improving the clinical outcomes of patients with cataract and enhancing their quality of life (American College of Eye Surgeons (ACOES), 2019).

Incorporating technological advancements, such as integrating telephone communication, within self-care management programs can

significantly enhance patient engagement and outcomes by enabling real-time monitoring and delivering personalized feedback customized to individual preferences and requirements (Dietz et al., 2023; Sakata et al., 2023). Previous research studies have shown that the remote approach of follow-up using telephones can reduce adverse events, improve treatment outcomes, and enhance patient knowledge and self-care practices (Sakata et al., 2023; Ruiss et al., 2024). Also, It has been suggested that remote post-operative follow-up through teleconsultation and self-assessment was a valid alternative to face-to-face clinical examination for follow-up, saving time and hospital resources while ensuring the safety and satisfaction of patients (Mojarad et al., 2022; Dole et al., 2023).

### Significance of the study:

By ensuring that patients receive comprehensive guidance regarding post-surgery care before leaving the *hospital* and supporting them remotely postoperative, nurses can significantly improve patient outcomes, reduce healthcare costs, and enhance decision-making during the post-discharge period (Trattler & Kaiser, 2012; American College of Eye Surgeons (ACOES), 2019). In this context, this study intends to empower geriatric patients with the knowledge and skills necessary to manage their condition effectively on a day-to-day basis by incorporating technological advancements (telephone support) within self-care management education sessions.

### Aim of study

This study aimed to explore the impact of incorporating a self-care management program with telephone follow-up on self-care compliance and coping of geriatric patients post-cataract surgery.

### Research hypotheses:

- 1- Geriatric patients who participate in the self-care management program with telephone follow-up will demonstrate higher compliance to self-care practices than those who don't participate in the intervention.

2- Geriatric patients who participate in the self-care management program with telephone follow-up will report significantly improved coping skills post-cataract surgery compared to those who don't participate in the intervention.

**Design:**

A quasi-experimental research design was utilized.

**Study Settings and Participants:**

The study was conducted at the ophthalmology surgical inpatient department and the ophthalmology outpatient clinic of Damanhur Ophthalmology Hospital, a facility affiliated with the Egyptian Ministry of Health and Population. This hospital houses inpatient and outpatient departments and features two identical major operating rooms equipped with standardized ophthalmic surgical instruments. Statistical reports from the hospital indicate that approximately 100 geriatric patients undergo cataract surgeries within three months. Typically, patients scheduled for cataract surgery are admitted to the hospital one day

before the procedure and are discharged 24 hours post-operation.

Assuming the effect size of incorporating a self-care management program with telephone follow-up has a small effect size of 0.35 on self-care practice compliance and coping skills of geriatric patients post-cataract surgery. Using an alpha error of 0.05 and 80% power, the number of groups is 2, and the number of measurements is 3, the minimum sample size required was 46 patients, 23 for each group. The sample size was calculated using G-power software. Consequently, sixty older adult patients, who met the eligibility criteria and attended the surgical inpatient and outpatient departments during the data collection period, were conveniently recruited. Inclusion criteria encompassed patients aged 60 years and above, demonstrating effective communication skills, scheduled for their first cataract surgery, and admitted to the hospital at least 24 hours before the surgical procedure. The geriatric patients were divided into control and intervention groups (Figure 1: Participants' flowchart).

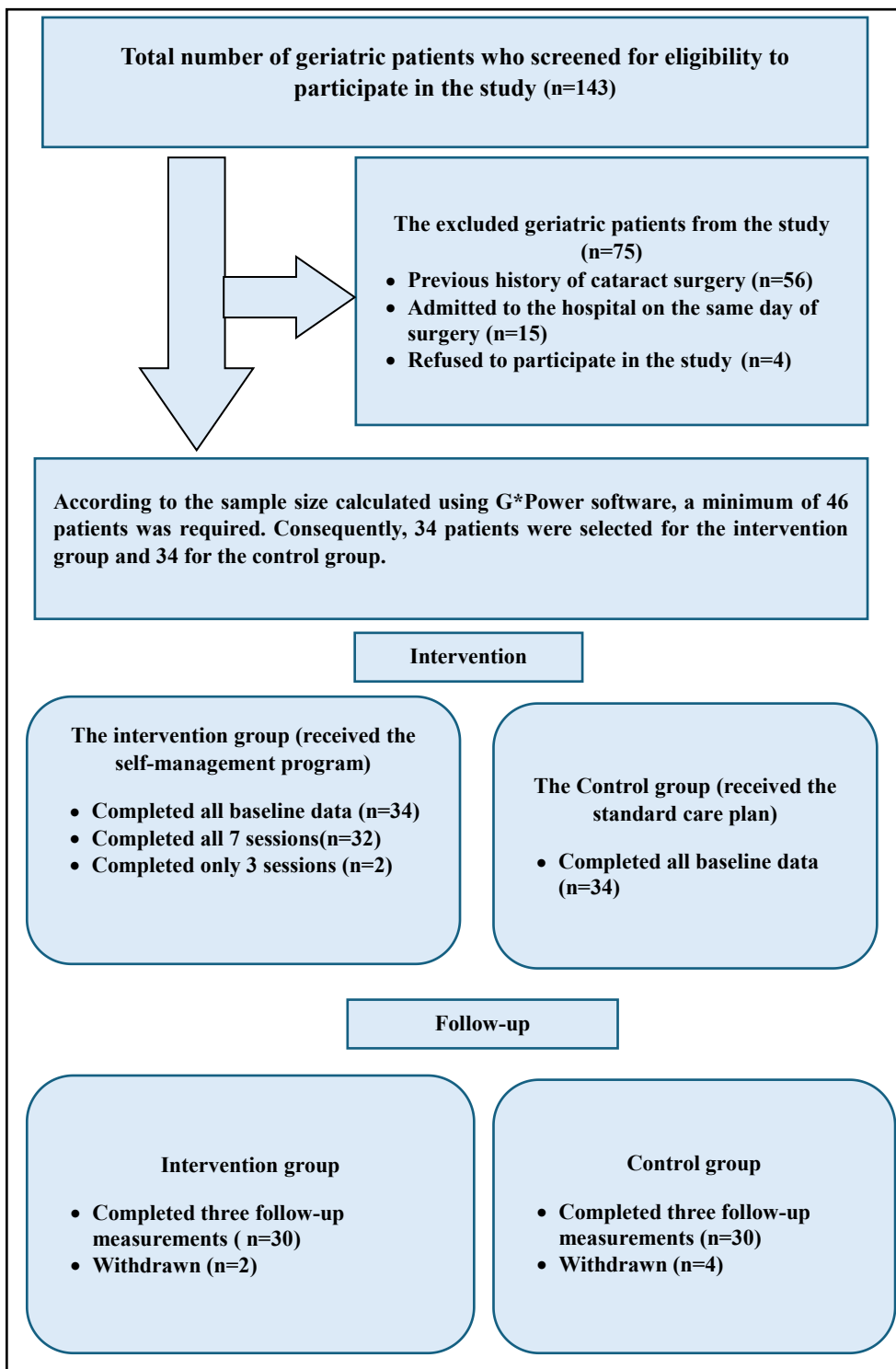


Figure 1: Participants' flowchart

**Measurements:** to collect the necessary data three tools were used:

**Tool 1: Patients' socio-demographic and clinical data sheet:**

This tool was developed by the researchers based on a review of the relevant literature (Taha & Abd Elaziz, 2015; El gazar, 2017; Qiu et al., 2019) It comprised two parts:

Socio-demographic data included age (in years), gender (male or female), social status (married or widow), educational level, occupation before retirement (illiterate or read and write or primary or secondary, income (enough or not enough), and living arrangement (with a partner or with one of the family members or alone).

Clinical data included the presence of chronic diseases (e.g., diabetes mellitus, hypertension), prescribed medications, and history of visual problems such as cataract duration, number of affected eyes, presence of other visual problems, and use of eyeglasses.

**Tool II: Self-care compliance scale**

The scale was developed by **Cho and Rho (2012)** and adapted and translated into the Arabic language by **Mahfouz et al. (2019)**. This tool was utilized to evaluate patients' self-care compliance following cataract surgery. It comprises 15 items across four domains: eye drops (4 items; e.g., washing my hands before the eye drops), hygiene (3 items; e.g., washing hair but not wetting in the operated eye), protection of the operation site (6 items; e.g., applying eye shields during the bedtimes), and daily life (2 items; e.g., restricting outdoor activities and strenuous exercise). Each item is rated on a 3-point scale (1= not done, 2= sometimes done, 3= always done), yielding a total score ranging from 15 to 45. The Arabic version of this tool demonstrates good validity and reliability (alpha coefficient=0.8) (Cho & Rho, 2012).

**Tool III: post-discharge coping difficulty scale (PDCDS)**

This 10-item questionnaire was developed by **Weiss and Piacentine (2006)**, and used to evaluate difficulties in coping following hospital discharge with stress, recovery, self-care, self-medical management abilities, family difficulties, required help, and emotional support, confidence in self-care, medical management abilities, and

adjustment. For example, how stressful has your life been, how much difficulty have you had with your recovery. Study participants are required to rate their coping difficulty on a 10-point Likert scale, ranging from 0= not at all to 10= extremely/a great deal. The total score ranges from 0 to 100, with a higher score indicating greater coping difficulty. This tool has been validated and exhibits good reliability (alpha coefficient= 0.979) (Weiss & Piacentine, 2006).

**Data collection and implementation of the program:**

- Before conducting the study, formal approval was obtained from the director of Damanhur Ophthalmology Hospital in Egypt. The study's objectives and data collection period were communicated during the permission request process to ensure transparency and adherence with institutional guidelines.
- The researchers designed a socio-demographic and clinical data sheet (Tool I) after conducting an extensive review of relevant literature sources (**Taha & Abd Elaziz, 2015; El gazar, 2017; Qiu et al., 2019**). This tool was instrumental in capturing essential information about the participants' background and medical history.
- The Arabic version of the self-care compliance scale (Tool II) was adopted to assess participants' compliance to self-care practices. Additionally, the post-discharge coping difficulty scale (PDCDS) (Tool III) was translated into Arabic and underwent content validity evaluation by a panel of five experts in Gerontological Nursing and Ophthalmology Medicine. The reliability of PDCDS was assessed using Cronbach's Alpha, demonstrating a commendable internal consistency of 0.979.
- A pilot study involving six geriatric patients, constituting 10% of the sample size, was conducted to assess the clarity, feasibility, and applicability of the research tools. These participants, selected from a designated ophthalmology department, were later excluded from the main study. Feedback from the pilot study informed necessary modifications to enhance the tools' effectiveness and relevance.

- The researchers established the learning objectives of the self-care management program and formulated its theoretical and clinical components based on recent evidence-based literature (Shoss & Tsai, 2013; Haripriya et al., 2016). The program structure included three face-to-face instructional sessions (two preoperative and one postoperative) and four follow-up telephone sessions aimed at reinforcing key information and addressing any postoperative complications.
- The study population was carefully selected from the surgical inpatient ophthalmology department. The intervention group, which received the self-management program, was drawn from the first two rooms, while the control group, which received the standard care plan (including only instructions about the activities to be avoided after cataract surgery) was selected from the remaining two rooms. This approach to study design helped to ensure the integrity of the results by preventing contamination between the two groups.
- Self-care Management Program implementation: the program comprised an established 3 face-to-face sessions and four telephone follow-up sessions, tailored for the intervention group. The periods were meticulously planned as follows:

#### Face-to-face sessions:

1. **The first session** illustrated the basic information about the cataract; its etiology, and its treatment. As well as patients were also educated about the surgical modalities of cataract and their expected outcomes.
2. **The second session** covered knowledge related to preoperative preparation, and strategies for coping with pre-operative anxiety and common postoperative symptoms.
3. **The third session** included a demonstration of the self-care practices that should be followed post cataract surgery (including eye drop instillation techniques, eye hygiene, and protection of operated eye) and daily lifestyle modifications during the recovery period (activities allowed and not allowed).

#### Telephone follow-up sessions:

It included 4 sessions conducted by the researchers at predetermined intervals to provide support for the patients and reinforcement of the important postoperative instructions. Patients were reminded of their medicine schedules, upcoming follow-up visits, and the right techniques for administering eye drops. Furthermore, researchers actively inquired about any postoperative complications experienced by the patients and offered guidance based on their individual needs.

- To evaluate the efficacy of the self-care management program, self-care compliance and post-discharge coping difficulty was assessed in the ophthalmology outpatient clinic by using tools (II, and III) for each participant in the intervention and control groups 3 times on the second and seventh postoperative day, and one-month post-cataract surgery.
- The data collection and implementation process were carried out over three months, beginning in September 2023 and ending in December 2023.

#### Ethical Considerations:

Ethical approval was obtained from the Research Ethics Committee at the Faculty of Nursing, Damam University (code: 62-a, 2022). Informed written consents were obtained from all participants before their inclusion in the study. Anonymity and privacy of the study subjects, confidentiality of the collected data, and the right to withdraw from the study at any time were ensured throughout the research process.

#### Statistical analysis:

Data was fed to the computer and analyzed using IBM SPSS software package version 25.0. Qualitative data were described using frequencies and percentages. The Shapiro-Wilk test was utilized to investigate the normality of data. The data doesn't follow the normal distribution so the median and range (Min-Max) were employed for quantitative variables. A Chi-square test was conducted to determine the statistical significance of differences in clinical measurements and participants' characteristics between the two participant groups, Montecarlo test and Fisher test were used if the assumption of chi-square was

violated. The Mann-Whitney U test was applied to compare the distribution of the self-care practice compliance scale and Post-Discharge Coping Difficulty Scale between the two studied groups. The Friedman test was used to assess the difference between the three measurements of the self-care practice compliance scale and the Post-Discharge Coping Difficulty Scale. If the Friedman test is significant a post hoc (adjusted Bonferroni) was conducted to determine the significance of each pair of measurements. If the p-value for an inferential analysis was less than 0.05, it was considered statistically significant.

### Results:

Table (1) indicates that over two-fifths (43.3%) of the control group were aged between 60 and less than 70 years, while 33.3% of the study group fell between 70 and less than 75 years old. The age for the control group ranged from 61 to 86 years, and for the study group it was 61 to 77 years, with mean ages of  $69.03 \pm 8.14$  and  $68.17 \pm 5.09$  years, respectively. 53.3% of the control group and 73.3% of the study group were male. In terms of marital status, 66.7% of the control group and 70% of the study group were married. Regarding educational attainment, both the control group and the study group included a significant proportion of illiterate participants, accounting for 66.6% and 60%, respectively.

Regarding employment status, 53.3% of the control group and 66.6% of the study group were employed before retirement. As for income, all of the control group and 93.3% of the study group reported insufficient income. Additionally, 60% of the control group and 66.7% of the study group were living with their partners. The data revealed that there was no statistically significant difference between the study and control groups across all socio-demographic characteristics, indicating that the two groups are well-matched.

Table (2) shows that hypertension was reported by 60% of the control group and by 66.7% of the study group. Diabetes mellitus was present in 53.3% of the control group and 66.7% of the study group. Anti-hypertensive and anti-diabetic medications were the most frequently prescribed medications for both groups, with 60% and 53.3% respectively in the control group, compared to 66.7% for each in the study group. The majority of participants in both the control and study groups (80% and 73.3% respectively)

reported that they regularly took their prescribed medications.

In terms of the duration of cataract disease, it was found that 33.3% of the control group and 40% of the study group had been diagnosed with the disease for a period ranging between 1-2 years. Additionally, the data showed that cataract affected only one eye in 60% of the control group and 50% of the study group.

Regarding the use of eyeglasses, the majority of participants in both groups (80% of the control group and 73.3% of the study group) were not wearing them. Overall, the table reveals that there was no statistically significant difference between the study and control groups in terms of clinical data, indicating that both groups were well-matched.

Table (3) shows that the median total scores of all self-practice compliance subscales in the study group at the 2nd, 7th, and one-month postoperative assessments were higher than the median scores of the control group. Specifically, the total score of the self-practice compliance scale was notably higher in the study group (40, 39, and 36) compared to the control group (23, 20.5, and 18) at the three postoperative time points, respectively. However, significant differences were demonstrated when comparing total median scores across the three postoperative time points for both groups, the median total scores decreased across time points.

Table (4) presents that the study group, which participated in the self-care management program, exhibited a decrease in the total score of the post-discharge coping difficulty scale compared to the control group at the 2nd, 7th, and one-month postoperative assessments, indicating better coping abilities. Specifically, the total scores of the post-discharge coping difficulty scale in the study group showed a significant decrease (median = 44) on the 2nd postoperative day compared to the control group (median = 83.5). On the 7th postoperative day and one month later, the total score of the post-discharge coping difficulty scale in the study group was lower (median = 41 and 37, respectively) than the control group (median = 82.5 and 79.5, respectively). However, significant differences were demonstrated when comparing total median scores across the three postoperative time points for both groups, the median total scores decreased across time points.



Table (1): Participants' socio-demographic characteristics (n = 60)

Socio-demographic characteristics	Control group (n = 30)	Study group (n = 30)	Statistical test	p-value
	No. (%)	No. (%)		
<b>Age</b>				
60 – <65	13 (43.3)	9 (30.0)	$\chi^2=3.545$	0.315
65 – <70	5 (16.7)	7 (23.3)		
70 – <75	5 (16.7)	10 (33.3)		
≥75	7 (23.3)	4 (13.3)		
Min – Max.	61.0 –86.0	61.0 –77.0	t=0.495	0.623
Mean ± SD.	69.03 ±8.14	68.17 ±5.09		
<b>Gender</b>				
Male	16 (53.3)	22 (73.3)	$\chi^2=2.584$	0.108
Female	14 (46.7)	8 (26.7)		
<b>Marital status</b>				
Married	20 (66.7)	21 (70.0)	$\chi^2=0.077$	0.781
Widow	10 (33.3)	9 (30.0)		
<b>Educational level</b>				
Illiterate	20 (66.6)	18 (60.0)	$\chi^2=2.839$	0.487
Read and write	2 (6.7)	0 (0.0)		
Primary	6 (20.0)	10 (33.3)		
Secondary	2 (6.7)	2 (6.7)		
<b>Occupation before retirement</b>				
Employee	16 (53.3)	20 (66.6)	$\chi^2=1.353$	0.559
Housewife	12 (40.0)	8 (26.7)		
Manual worker	2 (6.7)	2 (6.7)		
<b>Income</b>				
Enough	0 (0.0)	2 (6.7)	$\chi^2= 2.069$	0.492
Not enough	30 (100.0)	28 (93.3)		
<b>Living condition</b>				
With partner	18 (60.0)	20 (66.7)	$\chi^2= 1.746$	0.416
With one of the family members	10 (33.3)	6 (20.0)		
Alone	2 (6.7)	4 (13.3)		

SD: Standard deviation

t: Student t-test

 $\chi^2$ : Chi-square test

Table (2): The percentage distribution of the control and study group according to their clinical data

Clinical data	Control group (n = 30)	Study group (n = 30)	Test of Sig. $\chi^2$	P
	No. (%)	No. (%)		
<b>Presence of chronic diseases: #</b>				
No	0 (0.0)	2 (6.7)		( <sup>FE</sup> p=0.492)
Diabetes Mellitus	16 (53.3)	20 (66.7)		( <sup>FE</sup> p=0.292)
Hypertension	18 (60.0)	20 (66.7)		( <sup>FE</sup> p=0.592)
Rheumatoid diseases	2 (6.7)	0 (0.0)		( <sup>FE</sup> p=0.492)
Respiratory diseases	2 (6.7)	0 (0.0)		( <sup>FE</sup> p=0.492)
Renal diseases	0 (0.0)	2 (6.7)		( <sup>FE</sup> p=0.492)
Digestive diseases	2 (6.7)	0 (0.0)		( <sup>FE</sup> p=0.492)
Tumors	0 (0.0)	2 (6.7)		( <sup>FE</sup> p=0.492)
<b>Receiving medications for chronic diseases: #</b>				
No	0 (0.0)	2 (6.7)		( <sup>FE</sup> p=0.492)
Anti-diabetic medications	16 (53.3)	20 (66.7)		( <sup>FE</sup> p=0.292)
Anti-hypertensive medications	18 (60.0)	20 (66.7)		( <sup>FE</sup> p=0.592)
Rheumatoid disease medications	2 (6.7)	0 (0.0)		( <sup>FE</sup> p=0.492)
Respiratory disease medications	2 (6.7)	0 (0.0)		( <sup>FE</sup> p=0.492)
Renal disease medications	0 (0.0)	2 (6.7)		( <sup>FE</sup> p=0.492)
Digestive disease medications	2 (6.7)	0 (0.0)		( <sup>FE</sup> p=0.492)
Oncology medications	0 (0.0)	2 (6.7)		( <sup>FE</sup> p=0.492)
<b>Receiving medications regularly:</b>				
Yes	24 (80)	22 (73.3)		(MC <sup>p</sup> =0.664)
No	6 (20)	6 (20.0)		
Not applicable	0 (0.0)	2 (6.7)		
<b>Duration of cataract disease:</b>				
<3m	8 (26.7)	8 (26.7)	5.115	(0.164)
3 –<6m	4 (13.3)	8 (26.7)		
6 –12m	8 (26.7)	2 (6.7)		
12 –24 m	10 (33.3)	12 (40.0)		
<b>Site of cataract:</b>				
One eye	18 (60.0)	15 (50.0)	0.606	(0.436)
Both eyes	12 (40.0)	15 (50.0)		
<b>Wearing eyeglasses:</b>				
No	24 (80.0)	22 (73.3)	0.373	(0.542)
Yes	6 (20.0)	8 (26.7)		

#: More than one answer

SD: Standard deviation

t: Student t-test

 $\chi^2$ : Chi-square test

MC: Monte Carlo

FE: Fisher Exact

p: p-value for comparing between the control and study group.

Table (3): The difference between control and study groups according to their self-care practice compliance scale score.

Variable	Group	Time-based						p†	Post-hoc		
		Time 1 Median (Min- Max)	P#	Time 2 Median (Min- Max)	P#	Time 3 Median (Min-Max)	P#		P1	P2	P3
Eye drops											
	Control	6(5-9)	<0.001	6(4-9)	<0.001	5(4-7)	<0.001	<0.001	0.467	<0.001	<0.001
	Study	12(10-12)		12(9-12)		11(8-12)					
Eye Hygiene											
	Control	4(3-6)	<0.001	3.5(3-6)	<0.001	3(3-5)	<0.001	<0.001	0.320	0.004	0.320
	Study	8(6-9)		8(6-9)		7(5-9)					
Protection of operation site											
	Control	8(6-11)	<0.001	8(6-11)	<0.001	7(6-9)	<0.001	<0.001	0.905	<0.001	0.002
	Study	15(13-17)		15(13-16)		14(12-15)					
Daily life											
	Control	4(2-5)	<0.001	3(2-5)	<0.001	2.5(2-3)	<0.001	<0.001	0.413	<0.001	<0.001
	Study	6(5-6)		5(4-6)		5(3-6)					
Overall compliance											
	Control	23(18-31)	<0.001	20.5(16-31)	<0.001	18(15-24)	<0.001	<0.001	0.244	<0.001	<0.001
	Study	40(39-42)		39(37-42)		36(34-39)					

P#: Mann-Whitney test

p†: Friedman test

p1: p-value for comparing between time1 and time2.

p2: p-value for comparing between time1 and time3.

p3: p-value for comparing between time2 and time3.

Table (4): The difference between control and study groups according to their Post-Discharge Coping Difficulty Scale score

Variable	Group	Time-based						p <sup>†</sup>	Post-hoc		
		Time 1 Median (Min-Max)	P <sup>#</sup>	Time 2 Median (Min-Max)	P <sup>#</sup>	Time 3 Median (Min-Max)	P <sup>#</sup>		P1	P2	P3
Life has been stressful											
	Control	9(8-10)	<0.001	9(7-10)	<0.001	8(7-10)	<0.001	<0.001	0.999	0.000	0.006
	Study	3(2-5)		3(2-4)		2(1-3)		<0.001	<0.001	0.184	0.001
Emotional support you need											
	Control	9(8-10)	<0.001	9(8-10)	<0.001	8(8-10)	<0.001				
	Study	3(2-4)		3(2-4)		2(1-3)		<0.001	<0.001	0.736	0.001
Difficulty you have with recovery											
	Control	9(8-10)	<0.001	9(8-10)	<0.001	8(7-10)	<0.001	<0.001	0.736	0.001	0.035
	Study	3(2-4)		3(2-3)		2.5(2-3)		<0.001	<0.001	0.136	0.007
Difficulty to care for yourself											
	Control	9(8-10)	<0.001	9(8-10)	<0.001	8(7-10)	<0.001	<0.001	0.999	0.001	0.02
	Study	5(5-6)		5(4-5)		4(4-5)		<0.001	<0.001	0.02	0.000
Help you need to care for yourself											
	Control	9(8-10)	<0.001	9(8-10)	<0.001	8(8-10)	<0.001				
	Study	5(4-5)		4(3-5)		4(3-4)		<0.001	<0.001	0.007	0.000
Confidence in ability to care for yourself											
	Control	9(8-10)	<0.001	9(8-10)	<0.001	9(7-10)	<0.001				
	Study	5(4-5)		5(4-5)		4(3-5)		<0.001	<0.001	0.364	0.000
Ability to take care of your medical needs											
	Control	7(6-8)	<0.001	7(6-8)	<0.001	7(6-8)	<0.001				
	Study	5(5-6)		5(4-6)		4(4-6)		<0.001	<0.001	0.817	0.000
Difficulty to manage your medical condition											
	Control	9(8-10)	<0.001	9(8-10)	<0.001	8(8-10)	<0.001	<0.001	0.999	0.017	0.117
	Study	5(4-5)		5(4-5)		4(3-5)		<0.001	<0.001	0.526	0.000
Adjustment to be at home after your hospitalization											
	Control	7(7-9)	<0.001	7(6-8)	<0.001	7(6-8)	<0.001				
	Study	5(4-6)		5(4-6)		4(3-6)		<0.001	<0.001	0.999	0.001
Difficulty to have time with your family or close persons											
	Control	7.5(6-8)	<0.001	7(6-8)	<0.001	7(6-8)	<0.001				
	Study	5(5-6)		5(4-6)		5(4-5)		<0.001	<0.001	0.099	<0.001
Overall coping											
	Control	83.5(78-93)	<0.001	82.5(77-92)	<0.001	79.5(75-90)	<0.001	<0.001	<0.001	<0.001	<0.001
	Study	44(42-49)		41(38-46)		37(33-41)		<0.001	<0.001	<0.001	<0.001

P<sup>#</sup>: Mann-Whitney testp<sup>†</sup>: Friedman test

p1: p-value for comparing between time1 and time2.

p2: p-value for comparing

between time1 and time3.

p3: p-value for comparing between time2 and time3.

Hidden cells weren't represented as the Friedman test was statistically significant while in post-hoc doesn't show significant pairs.

## Discussion:

As the population ages, the incidence of cataract surgery is expected to double between 2010 and 2050. Surgery is the main cataract treatment when the visual impairment becomes severe enough to interfere with daily activities. Post-cataract surgery care, delivered by health care professionals including nurses and physicians, is one of the factors that influences the success of the surgery (Nijkamp et al., 2000; Olson, 2018). This care includes robust pre-surgical counseling and education that is intended to empower patients with information and skills to make informed decisions regarding their daily care, to improve patient's compliance with self-practice regimens, and to cope with arising problems (Stein et al., 2012; Kurniyawan et al., 2023). Provision of this care through telephone is a more convenient way for both the patients and health care providers to facilitate the care and continuous follow-up after surgery (World Health Organization [WHO], 2010). Therefore, the present study aimed to evaluate the impact of a self-care management program integrated with telephone follow-up on self-practice compliance and post-discharge coping difficulties in post-cataract surgery patients.

Our main finding is that a self-care management program with telephone follow-up significantly improve self-care compliance in geriatric patients post-cataract surgery compared to conventional care in the hospital. The current study reflects that the intervention group had a statistically significantly higher median score of self-practice compliance than the control one across the three post-operative time measurements. The success of this program could be attributed to the repeated instructions given to the intervention group about the steps of eye drops' installation, eye hygiene, operated eye protection, and daily life precautions through face-to-face sessions, telephone follow-up, and printed pamphlets. As well as researchers were providing geriatric patients the chance to demonstrate the correct technique of eye care in front of them until reach excellence. Telephone follow-up enabled the researchers to continuously monitor the patients remotely, and to address any difficulty in self-care tasks, which motivated them to be engaged in managing their health issues. This result is consistent with

studies conducted in Egypt (2018), and in Korea (2012) to evaluate the effectiveness of peri-operative education program on post-cataract surgery patients' outcomes. These studies revealed that the intervention group had a higher score on the postoperative self-care compliance questionnaire, especially regarding eye hygiene, protection of the operated eye, the activity of daily living (ADL), and eye drop administration in all visits (1st postoperative day, 1st week, 1st month postoperatively) (Cho & Rho, 2012; El Shafaey et al., 2018).

Integration of a self-care management program with telephone follow-up was effective in minimizing post-discharge coping difficulty to post-cataract surgery patients. It was proved that the current study's findings revealed a substantial difference in the median score of post-discharge coping difficulty between the study and control groups through the three measurements. This difference could be returned to the continued support and instructions provided to the intervention group, especially about adherence to medical regimen and its importance, managing their daily life after surgery, which activities are allowed and which not, and common adverse events after cataract surgery and its related self-care strategies to adjust with it and to prevent post-operative complications. Additionally, researchers suggested different coping strategies, such as meditation and relaxation techniques, that could be followed by geriatric patients to deal with the stress and anxiety associated with the surgery. Hadidi, K. (2016) demonstrated that knowledge imparted to patients through education could change their mindset about the disease and motivate them to adopt coping strategies to deal with arising problems (Hadidi, 2016). In line with our findings, Hadidi (2016), reported that perioperative health education to preoperative cataract patients was effective in improving coping strategies in these patients, with a significant difference in coping mechanisms between the treatment and control groups was found (Hadidi, 2016).

Following the implementation of the program, the intervention group exhibited a significant reduction in coping difficulties, particularly in areas related to stress management, recovery acceleration, self-care capabilities, and the management of medical conditions post-hospital discharge. The evaluation carried out

one month after the program's initiation revealed that the improvements were more pronounced than those observed in earlier assessments. This improvement is anticipated, as it is generally expected that postoperative discomfort diminishes over time, allowing geriatric patients to better adapt to their daily routines following surgery. Similarly, a randomized control trial study in the UK revealed that the intervention group who received an audio CD containing information, relaxation, and positive imagery before cataract surgery had significantly lower physiological and behavioral indicators of anxiety than the regularly treated control one (Kekecs et al., 2014). An additional recent study carried out in Iran has reported the effectiveness of an interdisciplinary supportive educational intervention in lowering the mean score of postoperative state and trait anxiety in the intervention group compared to their control counterparts (Moladoost et al., 2021).

Regarding the efficacy of educational programs in fostering recovery after cataract surgery, a quasi-experimental study done in Egypt supported our results and found that using individualized health teaching after cataract surgery was effective in decreasing postoperative complications for patients undergoing cataract surgery (El-Khamisy et al., 2019). Mahfouz NA et al., 2019 added that post-cataract discharge instructions resulted in a significantly lower incidence of eye infection in the study group compared to the control group (Mahfouz et al., 2019). Concerning the improvement of post-operative coping with self-care practice and managing medical conditions post our program, Gülşen and Akansel (2020) confirmed that the application of discharge education and telephone follow-up program for cataract patients was an effective intervention in enhancing the following aspects of postoperative care; applying eye drops, protecting the operated eye, identifying the conditions requiring a physician call and conditions that may deteriorate the operated eye, and the precautions related to personal hygiene, mobilization, and sleeping (Gülşen & Akansel, 2020). In the same context, other studies reflected that preoperative education for post-cataract surgery patients was valuable in leveraging patients' ability to manage their pain, engage in appropriate self-care activities, and increase patients' knowledge regarding

postoperative care (El Shafaey et al., 2018; Syabariyah et al., 2023).

Our findings underscore the importance of integrating tele-support with self-care management educational programs to improve self-care compliance and post-hospital discharge coping for cataract surgery patients. This study provides evidence that using technology via telephone calls could enhance patients' outcomes and engagement in self-practice by providing an opportunity for continuous monitoring and personalized teaching based on their unique needs and the challenges facing them daily. These individualized interventions have a pivotal role in empowering geriatric patients with the support and resources needed for effectively managing their medical conditions to foster recovery and preserve their quality-of-life post-cataract surgery.

#### **Limitations of the study:**

Certain limitations of the current study merit mention. First, regarding sample size and generalizability, this study included only 60 geriatric patients; this may limit the generalizability of the study findings to a broader population. A larger and more diverse sample could provide more robust data and support the applicability of the results across different demographics and settings. Second, regarding the follow-up duration, this study evaluates the outcomes at the 2nd, 7th, and one month postoperatively, longer-term follow-up may be necessary to determine the sustained impact of the intervention on the long-term recovery challenges or coping difficulties.

#### **Conclusion:**

Based on the findings of the present study it can be concluded that implementation of the Self-care management program with telephone follow-up proved to be successful in improving geriatric patients' self-care compliance, as well as, decreasing their post-discharge coping difficulties. Geriatric patients who participated in the self-care management program with telephone follow-up exhibited higher self-care compliance scores compared to the control group at different postoperative time points. Additionally, the geriatric patients in the study group showed a decrease in post-discharge

coping difficulties, indicating better-coping abilities compared to the control group.

### Recommendations:

Based on the results of this study, the following recommendations are suggested:

- 1- Personalized self-care management program for geriatric patients undergoing cataract surgery to be developed and implemented preoperatively by the nurse. This program should be tailored to the older adults' needs and emphasize customized interventions that empower the patients with the necessary information, thus enhancing their adherence to self-care practices and improving their coping skills postoperatively.
- 2- Ongoing monitoring and support through telephone follow-up to be provided for all geriatric patients during the recovery period of cataract surgery. The telephone follow-up offers guidance, reassurance, and assistance for those patients to address any emerging challenges promptly during this period.
- 3- Repeat this study by extending the follow-up period beyond four weeks. Extended follow-up can provide valuable insights by assessing the sustainability of self-care practice adherence and coping over time.

### References

- American College of Eye Surgeons (ACOES). (2019). *Guideline for cataract practice*. ACOES.
- Aziz, B. F., Elawamry, A. I., Roshdy, M. M., & Tawfik, C. A. (2021). Exfoliation syndrome in egypt: Prevalence and association with cataract in a large cohort. *Ophthalmology and Therapy*, *10*(4), 1045-1056. <https://doi.org/10.1007/s40123-021-00397-4>.
- Baquero, G. A., & Rich, M. W. (2015). Perioperative care in older adults. *Journal of Geriatric Cardiology*, *12*(5), 465-469. <https://doi.org/10.11909/j.issn.1671-5411.2015.05.018>.
- Chen, K., & Zeng, J. (2013). Analysis of the effect of daytime surgery for cataract patients. *West China Medical Journal*, *28*, 924-926.
- Cho, K.-S., & Rho, C. (2012). Effects of individualized postoperative education on anxiety levels and self-care compliance after one-day cataract surgery. *Journal of the Korean Ophthalmological Society*, *53*, 412. <https://doi.org/10.3341/jkos.2012.53.3.412>
- Connor, A. J., & Severn, P. S. (2011). Force requirements in topical medicine use--the squeezability factor. *Eye (London, England)*, *25*(4), 466-469. <https://doi.org/10.1038/eye.2011.5>.
- Costa, D., Maltez, F., Mota, L., & Príncipe, F. (2021). Relevance of information when elderly returning home after cataract surgery: nurses' perspective. *Millenium*, *14*, 21-28. <https://doi.org/10.29352/mill0214.20801>.
- Dietlein, T. S., Jordan, J. F., Lüke, C., Schild, A., Dinslage, S., & Kriegelstein, G. K. (2008). Self-application of single-use eyedrop containers in an elderly population: comparisons with standard eyedrop bottle and with younger patients. *Acta Ophthalmologica*, *86*(8), 856-859. <https://doi.org/10.1111/j.1755-3768.2007.01155.x>.
- Dietz, C. J., Sherrill, W. W., Ankomah, S., Rennert, L., Parisi, M., & Stancil, M. (2023). Impact of a community-based diabetes self-management support program on adult self-care behaviors. *Health Education Research*, *38*(1), 1-12. <https://doi.org/10.1093/her/cyac034>.
- Dole, K., Pakhale, S., Gandhi, A., Deshpande, M., Deshpande, R., & Kulkarni, S. (2023). A comparative clinical study of postoperative care by teleophthalmology and in-person consultation at hospital outpatient department after an uncomplicated cataract surgery. *Oman Journal of Ophthalmology*, *16*(3), 446-451. [https://doi.org/10.4103/ojo.ojo\\_82\\_22](https://doi.org/10.4103/ojo.ojo_82_22).
- Dreer, L. E., Girkin, C., & Mansberger, S. L. (2012). Determinants of medication adherence to topical glaucoma therapy. *Journal of Glaucoma*, *21*(4), 234-240. <https://doi.org/10.1097/IJG.0b013e31821dac86>.
- El-Khamisy, A. M. A., Ahmed, S. A., & Abo El-Ata, A. B. (2019). The effect of an individualize health teaching on post-operative outcomes for patients undergoing cataract surgery. *Port Said Scientific Journal of*

- Nursing*, 6(1), 229-246. <https://doi.org/10.21608/pssjn.2019.35363>.
- El gazar, W. K. (2017). *Developing post-operative self-care guideline for patient undergoing cataract surgery* [Master Thesis]. Faculty of Nursing: Benha University.
- El Shafaey, M., Basal, A., Ibrahim, R., & Shalaby, O. (2018). Effect of implementing teaching program on knowledge and practice of nurses and clinical outcomes of patients post cataract surgery. *Journal of Nursing and Health Science*, 7(3), 60-70. <https://doi.org/10.9790/1959-0703106070>.
- Eliopoulos, C. (2014). *Gerontological Nursing: Sensation* (8<sup>th</sup> ed.). WoltersKluwer Health.
- González, M. G., Kelly, K. N., Dozier, A. M., Fleming, F., Monson, J. R. T., Becerra, A. Z., Aquina, C. T., Probst, C. P., Hensley, B. J., Sevdalis, N., & Noyes, K. (2017). Patient perspectives on transitions of surgical care: Examining the complexities and interdependencies of care. *Qualitative Health Research*, 27(12), 1856-1869. <https://doi.org/10.1177/1049732317704406>.
- Gülşen, M., & Akansel, N. (2020). Effects of discharge education and telephone follow-up on cataract patients' activities according to the model of living. *Journal of Perianesthesia Nursing*, 35(1), 67-74. <https://doi.org/10.1016/j.jopan.2019.04.010>.
- Hadidi, K. (2016). *Pengaruh psikoedukasi terhadap pengetahuan, koping, kepatuhan, dan tekanan darah pada lansia dengan hipertensi menggunakan pendekatan model teori adaptasi roy* [Master Thesis]. Fakultas Keperawatan Universitas Airlangga.
- HariPriya, A., Baam, Z. R., & Ravindran, R. D. (2016). Postoperative cataract care: the Aravind perspective. *Community Eye Health*, 29(94), 25-26.
- Hegazy, S. M., Ragheb, M. M., Ragheb, S. G., El-Sayed, N. O., & Rashad, M. A. (2012). Health needs management among patients undergoing day case cataract surgery: A proposed protocol. *Life Science Journal*, 9(2), 1316-1327.
- Hoffmann, G. (2012). *Basic Geriatric Nursing: Overview of Aging* (5<sup>th</sup> ed.). Mosby Co.
- Hu, F. Y., O'Mara, L., Tulebaev, S., Orkaby, A. R., Cooper, Z., & Bernacki, R. E. (2022). Geriatric surgical service interventions in older emergency general surgery patients: Preliminary results. *Journal of the American Geriatrics Society*, 70(8), 2404-2414. <https://doi.org/10.1111/jgs.17916>.
- Jimmy, B., & Jose, J. (2011). Patient medication adherence: measures in daily practice. *Oman Medical Journal*, 26(3), 155-159. <https://doi.org/10.5001/omj.2011.38>.
- Kekecs, Z., Jakubovits, E., Varga, K., & Gombos, K. (2014). Effects of patient education and therapeutic suggestions on cataract surgery patients: a randomized controlled clinical trial. *Patient Education and Counseling*, 94(1), 116-122. <https://doi.org/10.1016/j.pec.2013.09.019>.
- Khairallah, M., Kahloun, R., Bourne, R., Limburg, H., Flaxman, S. R., Jonas, J. B., Keeffe, J., Leasher, J., Naidoo, K., Pesudovs, K., Price, H., White, R. A., Wong, T. Y., Resnikoff, S., & Taylor, H. R. (2015). Number of people blind or visually impaired by cataract worldwide and in world regions, 1990 to 2010. *Investigative Ophthalmology & Visual Science*, 56(11), 6762-6769. <https://doi.org/10.1167/iovs.15-17201>.
- Kurniyawan, E. H., Kartika, P. D. P., Deviantony, F., & Fitria, Y. (2023). Perioperative health education improves coping mechanisms in preoperative cataract patients. *Health and Technology Journal (HTechJ)*, 1(1), 9-15. <https://doi.org/10.53713/htechj.v1i1.2>.
- Lam, D., Rao, S. K., Ratra, V., Liu, Y., Mitchell, P., King, J., Tassignon, M. J., Jonas, J., Pang, C. P., & Chang, D. F. (2015). Cataract. *Nature Reviews. Disease Primers*, 1, 15014. <https://doi.org/10.1038/nrdp.2015.14>.
- Lansingh, V. C., Eckert, K. A., & Strauss, G. (2015). Benefits and risks of immediately sequential bilateral cataract surgery: a literature review. *Clinical & experimental ophthalmology*, 43(7), 666-672. <https://doi.org/10.1111/ceo.12527>.
- Lee, C. M., & Afshari, N. A. (2017). The global state of cataract blindness. *Current Opinion in*



- Ophthalmology*, 28(1), 98-103. [https:// doi. org/ 10.1097/icu.0000000000000340](https://doi.org/10.1097/icu.0000000000000340).
- Li, Y. J., Kim, H. J., & Joo, C. K. (2011). Early changes in corneal edema following torsional phacoemulsification using anterior segment optical coherence tomography and Scheimpflug photography. *Japanese Journal of Ophthalmology*, 55(3), 196-204. [https:// doi. org/ 10.1007/s10384-011-0007-5](https://doi.org/10.1007/s10384-011-0007-5).
- Lin, H. S., Watts, J. N., Peel, N. M., & Hubbard, R. E. (2016). Frailty and post-operative outcomes in older surgical patients: a systematic review. *BMC Geriatrics*, 16(1), 157. [https:// doi. org/ 10.1186/s12877-016-0329-8](https://doi.org/10.1186/s12877-016-0329-8).
- Mahfouz, E., Mohamed, A. A., Abdelhalim, A. S., & Mohamed, R. F. (2019). Effect of post cataract surgery discharge instructions on reducing eye infection among elderly patients. *Minia Scientific Nursing Journal*, 006(1), 19-25. [https:// doi. org/ 10.21608/msnj.2019.187794](https://doi.org/10.21608/msnj.2019.187794).
- Matossian, C. (2020). Noncompliance with prescribed eyedrop regimens among patients undergoing cataract surgery—prevalence, consequences, and solutions. *US Ophthalmic Review*, 13, 18. [https://doi. org/ 10.17925/USOR.2020.13.1.18](https://doi.org/10.17925/USOR.2020.13.1.18).
- Meleis, A. I. (2010). *Transitions theory. Middle range and situation specific theories in nursing research and practice*. Springer Publishing Company.
- Miller, F. J., Piacentine, L. B., & Weiss, M. (2008). Coping difficulties after hospitalization. *Clinical Nursing Research*, 17(4), 278-296. [https:// doi. org/ 10.1177/ 1054773808325226](https://doi.org/10.1177/1054773808325226).
- Mojarad, F., Salehiniya, H., Davoodi, L., Ghasemian, M., Nazari, N., Ebrahimzadeh, A., & Abdi, K. (2022). Evaluation of the Effect of Patient Education and Telephone Follow-Up on Self-Care, Self-Efficacy, and Admission Rate of Heart Patients with COVID-19. *Tabari Biomedical Student Research Journal*, 1-7. [https:// doi. org/ 10.18502/ tbsrj. v4i3.10513](https://doi.org/10.18502/tbsrj.v4i3.10513).
- Moladoost, A., Salehi, A., Farzi, S., Dehghani, A., Razmjoo, H., Mohammadi, Z. S., & Farzi, S. (2021). The Effects of an Interdisciplinary Supportive Educational Program on Anxiety among Patients Undergoing Cataract Surgery. *Nursing and Midwifery Studies*, 10(3), 145-150.
- Neville, A., Lee, L., Antonescu, I., Mayo, N. E., Vassiliou, M. C., Fried, G. M., & Feldman, L. S. (2014). Systematic review of outcomes used to evaluate enhanced recovery after surgery. *The British Journal of Surgery*, 101(3), 159-170. [https:// doi. org/ 10.1002/bjs.9324](https://doi.org/10.1002/bjs.9324).
- Nijkamp, M. D., Nuijts, R. M., Borne, B., Webers, C. A., van der Horst, F., & Hendrikse, F. (2000). Determinants of patient satisfaction after cataract surgery in 3 settings. *Journal of Cataract and Refractive Surgery*, 26(9), 1379-1388. [https://doi. org/ 10.1016/s0886-3350\(00\)00501-0](https://doi.org/10.1016/s0886-3350(00)00501-0).
- Olson, R. J. (2018). Cataract surgery from 1918 to the present and future—just imagine! *American Journal of Ophthalmology*, 185, 10-13. [https:// doi. org/ 10.1016/ j. ajo. 2017. 08.020](https://doi.org/10.1016/j.ajo.2017.08.020).
- Pandit, R. T., & Coburn, A. G. (2011). Sudden corneal edema due to retained lens nuclear fragment presenting 8.5 years after cataract surgery. *Journal of Cataract and Refractive Surgery*, 37(6), 1165-1167. [https:// doi. org/ 10.1016/j.jcrs.2011.03.026](https://doi.org/10.1016/j.jcrs.2011.03.026).
- Pizzarello, L., Abiose, A., Ffytche, T., Duerksen, R., Thulasiraj, R., Taylor, H., Faal, H., Rao, G., Kocur, I., & Resnikoff, S. (2004). VISION 2020: The Right to Sight: a global initiative to eliminate avoidable blindness. *Archives of Ophthalmology*, 122(4), 615-620. [https:// doi. org/ 10.1001/ archophth. 122.4.615](https://doi.org/10.1001/archophth.122.4.615).
- Qiu, C., Feng, X., Zeng, J., Luo, H., & Lai, Z. (2019). Discharge teaching, readiness for discharge, and post-discharge outcomes in cataract patients treated with day surgery: A cross-sectional study. *Indian Journal of Ophthalmology*, 67(5), 612-617. [https:// doi. org/ 10.4103/ ijo. IJO\\_ 1116\\_ 18](https://doi.org/10.4103/ijo.IJO_1116_18).
- Rao, G. N., Khanna, R., & Payal, A. (2011). The global burden of cataract. *Current Opinion in Pphthalmology*, 22(1), 4-9. [https:// doi. org/ 10.1097/ ICU.0b013e3283414fc8](https://doi.org/10.1097/ICU.0b013e3283414fc8).
- Roberts, H. W., Day, A. C., & O'Brart, D. P. (2020). Femtosecond laser-assisted cataract

- surgery: A review. *European Journal of Ophthalmology*, 30(3), 417-429. <https://doi.org/10.1177/1120672119893291>.
- Ruiss, M., Pai, V., Pilwachs, C., Bayer, N., Palkovits, S., & Findl, O. (2024). Quality assurance via telephone interviews after cataract surgery: An explorative study. *PLoS One*, 19(3), e0298149. <https://doi.org/10.1371/journal.pone.0298149>.
- Sakata, Y., Nomura, H., Nakajima, H., Kitajima, T., Ito, Y., & Yamamoto, Y. (2023). Impact of telephone follow-up on hepatocellular carcinoma patients receiving oral chemotherapy from an ambulatory-care setting. *Journal of Oncology Pharmacy Practice*, 10781552231215427. <https://doi.org/10.1177/10781552231215427>.
- Shoss, B. L., & Tsai, L. M. (2013). Postoperative care in cataract surgery. *Current Opinion in Ophthalmology*, 24(1), 66-73. <https://doi.org/10.1097/ICU.0b013e32835b0716>.
- Stein, H. A., Stein, R. M., & Freeman, M. I. (2012). Highlights of ocular surgery. In H. A. Stein, R. M. Stein & M. I. Freeman (Eds.), *The ophthalmic assistant: a text for allied and associated ophthalmic personnel* (p.p. 513–540). Elsevier.
- Stevens, G. A., White, R. A., Flaxman, S. R., Price, H., Jonas, J. B., Keeffe, J., Leasher, J., Naidoo, K., Pesudovs, K., Resnikoff, S., Taylor, H., & Bourne, R. R. A. (2013). Global prevalence of vision impairment and blindness: magnitude and temporal trends, 1990-2010. *Ophthalmology*, 120 (12), 2377-2384. <https://doi.org/10.1016/j.ophtha.2013.05.025>.
- Syabariyah, S., Hidayat, T. M., Sofiyah, Y., & Hisan, U. K. (2023). Audiovisual media effectiveness in post-cataract surgery care education in National Eye Center Cicendo Hospital. *International Journal of Public Health*, 12(4), 1736-1743.
- Taha, N., & Abd Elaziz, N. (2015). Effect of nursing intervention guidelines on nurses' role, patients' needs, and visual problems post cataract surgery. *The American Journal of Nursing*, 4, 261-269. <https://doi.org/10.11648/j.ajns.20150405.13>.
- Taipale, C., Grzybowski, A., & Tuuminen, R. (2020). Effect of cataract surgery on quality of life for patients with severe vision impairment due to age-related macular degeneration. *Annals of Translational Medicine*, 8(22), 1543. <https://doi.org/10.21037/atm-2020-965>.
- Trattler, W., & Kaiser, P. (2012). *Review of ophthalmology: Anterior Segment* (2<sup>nd</sup> ed.). Elsevier Co.
- Weiss, M. E., & Piacentine, L. B. (2006). Psychometric properties of the Readiness for Discharge Scale. *Journal of Nursing Measurement*, 14(3), 163-180. <https://doi.org/10.1891/jnm-v14i3a002>.
- World Health Organization [WHO]. (2010). *Telemedicine: Opportunities and Developments in Member States: Global Observatory for e-health*. WHO.
- World Health Organization [WHO]. (2015). *World sight day Egypt event*. WHO.
- World Health Organization [WHO]. (2019). *Report of the 2nd Global Scientific Meeting on Trachoma*. WHO.
- Yan, H., Chen, X., & Chen, Y. (2019). Postoperative complications of cataract: current status and countermeasures. *Recent advances: Ophthalmology*, 39(1), 1-7.